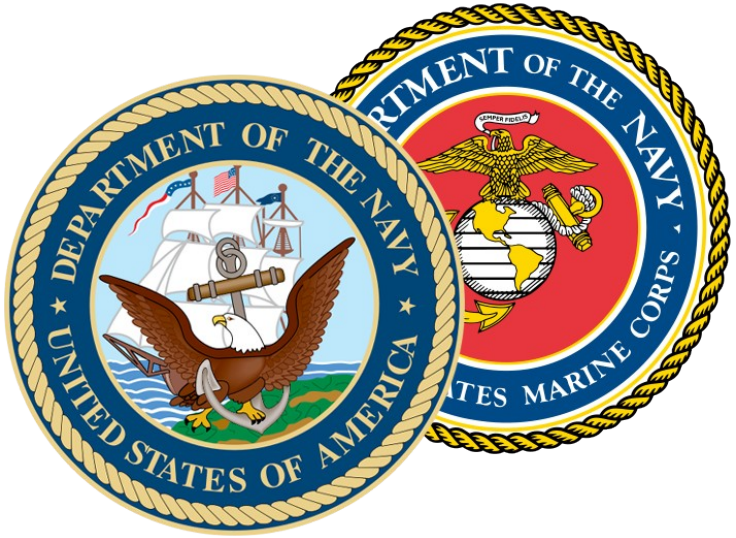
Implementing IUID in the ILO Process



IUID in the ILO Process

Navy Vision:

- DASN(A&LM) goal is to accomplish more opportunistic marking in accordance with SECNAVINST 4440.34 (pg 4, para 5e)

Why ILO (Integrated Logistics Overhaul)?

- ILO is a central point for inventory and replenishment of repair parts for Navy ships.
- Process is perfect for “opportunistic marking” as all items are offloaded from the ship and each is handled as it is counted during the inventory.
- Ships undergo an ILO every few years.
- Does not impact ship operations.
- Does not impact ILO business process.

Implementation Site & Process

Where to Implement?

- Site chosen was the FISC MARMC (Fleet and Industrial Supply Center Mid-Atlantic Regional Maintenance Center) ILO facility in Portsmouth.

What Process to implement?

- ILO is composed of numerous processes.
- Decision was made to first implement the Repair Parts Analysis Group (RAG) process:
  - RAG is the most complex and has the most items.
  - A typical ship has 12-14,000 different RAG line items. A line item is one part number, so there can be multiple quantities of each.
  - Consists of identifying what is on the ship, comparing to R-Supply database, pulling excesses & replenishing shortages.

Overview of the RAG Process

- RAG inventory process consists of 4 counts: three 10% samples and one 100% inventory.
- RAG inventory process consisted of importing the MSSLL (Master Stock Status & Locator List) output R-Supply into a master Excel spreadsheet.
  - Spreadsheet sorted, inventory sheets generated and printed..
  - Inventory personnel would count the items and record on inventory sheets.
  - Master spreadsheet would be manually updated.
  - Discrepant counts verified through additional counts.
  - Excesses pulled, replacements ordered.

IUID requires Automatic Identification Technology (AIT), in this case, scanners capable of reading 2D data matrix barcodes. So…how to implement IUID into this process?

How to Implement IUID?

- Could be implemented in one of two ways:
  - Leave existing processes in place; implement IUID as a separate process.
    - Advantage: Cheaper and quicker using government-owned QCTS tools.
    - Disadvantage: Users have a separate task to perform.

    OR

  - Automate the inventory process and add IUID capability into it.
    - Advantage: No paper inventory sheets. Cumbersome tasks now automated.
    - Disadvantage: More expensive; longer development time.

The decision was made to expend the additional funds to automate the RAG process and incorporate IUID into it

Development Process

- Development began in July 2009 and product was delivered in December 2009 (6 months).
- Used existing QCTS tools.
- System was developed using “rapid prototyping”
  - Users have something to see as development progresses.
  - Corrections can be made earlier in product development as they are identified.
  - Earlier changes will have less effect on interrelated data processes.
  - Delivered product is closer to meeting user needs.

Changes to the ILO RAG Process

- Two-part system: web-based supervisor application & handheld computer application.
- Manual processes that were automated include:
  - System selects items to be counted during the 10% sample inventories.
    - Supervisor assigns items to inventory personnel who will be doing the count.
  - Inventory is downloaded to handhelds.
    - User sees only the items assigned to him/her for count.
  - Counts are uploaded to the server and discrepant counts are flagged for the supervisor's attention.
    - Supervisor can reassign for additional counts, or accept count as "final."
  - Multiple reassignments for counts.
  - MSSLL updates uploaded into system.
  - System generates reporting statistics.
  - System generates R-Supply updates.

IUID and ILO

- IUID Marking added to the RAG process:
  - Handheld devices can scan 2D data matrix barcodes.
  - System has the ability to concatenate raw IUID barcode data into a UII.
  - IUID-required items (cost ≥ 5K) flagged by system.
    - The supervisor can designate any other items as IUID-required.
  - IUID-required items identified on the handheld screen with a 2d data matrix icon.
  - Inventory personnel applies label to item; scans label.
- Pre-printed Construct 1 labels are used.
- Server application processes the marked items for registration via the Quick Compliance Tool Suite (QCTS).

Reports Automation

- Weekly, Monthly, and End of Availability reports were automated.
  - Previous report process consisted of updates sent via email to person who created the report.
  - New process provides reporting module in which inputs are made.
    - Manager reviews inputs, makes edits, and designates the report as “final.”
    - System generates the final report and emails it to everyone on the distribution list.
  - Number of items IUID-Marked was added to the reports.

Summary of Benefits

- IUID Capability.
- Paperless Inventory and automatic transfer of counts to supervisor’s application.
- Automatic selection of 10% samples.
- Count discrepancies automatically identified.
- Automation of MSSLL update process.
- Electronic transmission of update file to R-Supply.
- Reporting process greatly improved.
  - Supervisors make inputs directly into reports module.
  - Reviewed by manager; final approval.
  - Reports automatically generated and emailed to distribution list.

Planning for the Future of ILO

- New system is modular. Other processes can be easily added as funding becomes available.
- System can be easily expanded to include other ILO sites.
- Wireless technology could be easily incorporated.

Obstacles

- Short timeline: < 6 months from start to implementation.
- Developers were unfamiliar with ILO process.
  - Users knew only their part of the process—not the process as a whole.
- Issues of how to do things under new system had to be resolved.
  - Problem of voided warranty if sealed items were opened for marking.
- NIIN as a group of items; IUID requires more granularity.
- Data transfers to/from handhelds limited by NMCI requirements.
  - No wireless capability: had to develop a workaround.
- Uploading MSSLLs and generating outputs to R-Supply—automatically.

Lessons Learned

- Involve users in the development process.
  - All system processes are interrelated; questions need to be resolved as early as possible.
- Re-engineer the system when it makes sense.
  - Manual inventory processes were obsolete and needed to be automated.
- Change business processes when it makes sense…but don’t go overboard.
- Fewer items could be IUID-marked than initially anticipated.
  - More items were sealed than expected.
- NMCI workaround is problematic.
  - NMCI needs to develop a policy allowing use of wireless technology.

Thank you for your attention

QUESTIONS?